

was, how to increase the pressure without increasing the weight of the mass to be moved; and it has been elegantly done by M. Nikke, who has contrived to convert every point of the locomotive's wheel as it comes in contact with the rail into an artificial magnet and thus to obtain the requisite adhesion. A galvanic coil with a battery attached, rigidly connected with the fixed parts of the carriage, surrounds horizontally the lower part of the wheel close to the rail, so that the wheel turns freely round, and without touching the coil. Accordingly, the lower parts of the wheel may be compared with a bar of soft iron in the midst of an electro-bell: it becomes magnetic, and thus, without any increase of weight, the pressure, and consequently the adhesion, may be increased at will. The influence of the adhesion is unaffected by the state of the rails, whether they be dry or wet, and thus the magnetised wheels are placed beyond the reach of atmospheric changes. By means of a handle, the magnetism can be turned off and on at will, and thus an electro-break, possessing a great advantage over the break-jacks in use, in not interfering with the rotation of the wheels, is brought into play, depending for its efficacy upon the power, capable of being called into instantaneous exercise, of making the rails smooth or adhesive at the discretion of the engine driver. The experiments have not been confined to models, but have been conducted on a great scale, and with perfect success, under the superintendence of an officer of engineers holding a high position in the practical administration of railway affairs in France, and who, we are given to understand, is so completely satisfied with the results, that he has embarked a large portion of his fortune in promoting the undertaking. — An examination of the late census of Great Britain, as remarked by the *Times*, will show that the numerical prosperity of our towns is very closely connected with the possession of railway advantages. The remarkable illustrations of this truth, which are obtained from a careful inspection of this document, may be regarded as indicating in some cases the commercial intelligence and energy of the population, which did not fail to perceive and secure the benefits derivable from a railway connection with other parts of the country, while in other instances towns have been benefited by being placed in positions which secured for them those advantages unsought, or even in the face of opposition. — Railways are weaving like a spider's web over the continent, so that speedy communication will soon be available in all directions, as in England. The railroad from Berlin to Bromberg has been opened, according to a Berlin correspondent of the *Globe*. The line between Reichenbach and Plauen being finished, there is now direct communication between Munich and Leipzig. Railway contracts have been concluded between Austria, Parma, Modena, Turin, and Rome. The railway connecting the Austrian and Tuscan lines will run via Mantua, Borgoforte, Modena, Bologna, and Perreta, to Pistoja. Thus, in a short time there will be direct and speedy communication between the Mediterranean and the Black Sea on the south and the seas on the north of the continent. The following lines are also about to be undertaken: — From Wiesbaden to Dents (opposite to Cologne); from Giessen to Coblenz; and from Neustadt to Weissenburg, in the Palatinate. — We are about to have locomotives among the pyramids of Egypt, too, it seems. Recent communications announce that the viceroy had made final arrangements for the construction of a railway between Cairo and Alexandria, and had signed an agreement for that purpose with Mr. Borthwick, who was there on the part of Mr. Robert Stephenson, and who intended returning to England by the next steamer to send out a staff of engineers to commence operations forthwith. It is calculated that the line will be completed in about two years and a half. The whole length will be about 130 miles, and it will cross the Nile at the barrage, where a substantial bridge is already nearly finished, having been made by French engineers with the object of damming the Nile for the better irrigation of the land;

an attempt in which, it is said, they have signally failed, after having spent an immense amount of money. Eight thousand francs a mile is mentioned as a guess at the expense.

—From a statistical account of the Prussian railways at the end of last year, lately issued, it appears that the lines, twenty-two in number, had, at that time, a length of 294 German miles. The capital of the companies devoted to their construction was 181,459,584 thalers. — A table has recently been published containing an account of the railways in the United States. The whole number of railways is 335, measuring 10,287 miles in length, and constructed at a cost of 306,607,954 dollars. — It appears that a project has been started for forming a line, to be called the Great Western Railroad, from Niagara river to Detroit river, as a link in the great trunk railway from the Atlantic to the Mississippi, which, it is said, will be not only the shortest route, but more level in grades and straight in linear arrangement than any other trunk line can be made for the same route of travel. At present the case stands thus: — The Canadians have taken one-half of the 40,000 shares of 20l. each — the Americans have taken the 10,000 shares offered to them; and the question now is asked — will the mother country take the remaining 10,000 shares? The *Liverpool Standard* announces a meeting in Manchester for the purpose of inaugurating the movement.

#### ALAS! WESTMINSTER BRIDGE.

ANOTHER session is over, and still nothing settled with respect to this bridge. How much longer is this to continue? By the evidence of the engineer examined before the Committee of the House, it appears by no means an improbable event that a severe winter, with heavy accumulation of ice in the river, may carry away the present shoring, and send the whole into the river. So sure as that happens, Blackfriars will follow, and thus two great thoroughfares be cut off. Of all this we have had warnings for years past. How the City Authorities and the Westminster Bridge Company could sanction such wasteful outlays, after the opportunity they had offered them of seeing the nature of the bed of the river, and the action upon the same since the removal of London bridge, as shown in the plans accompanying the reports, is really past belief: such blunders and waste might have been looked for a century ago; but, with all our experience, to commit them at this time of day, certainly reflects no credit on the engineer under whose management the work of both bridges has been carried on. It is all very convenient to condemn Labeyrie; but in what respect is that engineer his superior who attempts that which, judging from the evidence of the first men of the day, never could succeed.

#### ARCHITECTURE IN MALTA.

A first attempt has been made to introduce the old English domestic style of architecture into the island of Malta, where the Italian palatial mostly prevails. This edifice was built, at the expense of an English gentleman resident in the island, by a Maltese architect. A castellated centre covers a lofty hall, which communicates with and ventilates every part of the house, by means of windows near the ceiling at the back. Such a centre hall is adapted to the climate, and serves for the assemblage of the family during the heat of the day. And this purpose is expressed in its massive architecture, the walls being three feet thick, with few apertures, in order to resist the rays of the burning sun of the south, which is the aspect of this front.

In the left wing is a drawing-room, with its oriel window, 24 by 16 feet; and a smaller drawing-room, or library, behind. Below the principal drawing-room is the dining-room, opening into the garden, by the descent of a few steps through a Tudor door-way, under the oriel window. The entrance to the house is under the porch, which supports an open balcony in the centre of the building, and is approached by steps on each side of the porch.

The whole is built of the free-stone of the country, rusticated, with the exception of the open balcony and porch, which are of smooth ashlar.

That indispensable, and sometimes ornamental, object, a stack of chimneys, which forms a conspicuous and comfortable-looking feature in buildings of this character in England, would rather be deemed an excrescence in Malta, where cooling and refreshing associations are looked for. Some chimneys, however, are necessary; but they are here rather concealed from than obtruded upon the eye. For the information of those who may be acquainted with the island of Malta, the situation of this building is on the high land overhanging the road to the village of *Sliema*, which borders the *Marsamuscetto Harbour*, commonly called the *Quarantine Harbour*, a position advantageous to its outline and general effect.

#### VICTORIA-STREET, WESTMINSTER.

THE *Times*, in the course of an interesting article on the state of London town, — what has been done, and what is wanted, — speaks of the new street through Westminster just now opened, and the writer says he must "in fairness add, that all parties appear to have displayed the greatest energy in furthering this great onward movement towards the improvement of the metropolis." If the commissioners feel that "praise undeserved is censure in disguise," this good-natured remark will sting them. So far from energy having been displayed by them, some say there has been the greatest want of it; with much mismanagement, and fearful waste of time and money.

If the statements that have been made to us from time to time be correct, an order of the House of Commons for the production of minutes of all proceedings, and accounts of moneys received and spent by the commissioners, would put a curious face upon the matter.

#### IRISH ENGINEERING AND ARTISTIC INTELLIGENCE.

THE board of guardians of the Dungarvan Union intend erecting a wing or additional buildings to the present workhouse; also to raise to a height of two stories the main body of the house, containing master's and matron's apartments. The designs for these have been furnished by the architect to the Poor-Law Commissioners.

The churches at Kileowriola, county Antrim, and Ballinacry, county Mayo, are to be rebuilt, and various works executed at the churches of Killead, Clonallen, Clonduff, and Termounmaguirke, according to the plans of the Ecclesiastical Commissioners' architect.

Sundry works are to be executed at the barrack-master's house, Carlou, by her Majesty's Board of Ordnance.

A new pier is to be erected at Queenstown, and the Board of Admiralty has declared Messrs. Riggby and Co. the contractors.

"With the exception of the police, and possibly of a few gentlemen connected with one or other of the Sanitary Commissions, it would, we suspect, be very difficult to find within the circuit of the metropolis a single individual who has studied its various districts with any very minute attention. Some few among us know the secret history of one locality — some, of another — so one has grasped the subject as a whole; and yet it well deserves all the attention and all the sagacity that can be bestowed upon it. There are still districts within the circuit of this great city teeming with vice and misery, which must be purged, physically and morally, if we would see the calendar at the Old Bailey reduced to decent proportions, and any permanent improvement in the condition of the metropolitan population. It will never do to leave hot-beds of vice here and there, and content ourselves with erecting equestrian statues of George IV. That will never mend matters. Public buildings of considerable pretension have been erected on the smoking embers of others which redounded but little to the national credit. Great squares have been opened, and wide streets have been cut, to the manifest advantage and ornament of the metropolis. Better still, some of the most vicious and wretched quarters of the town have been effectually purified. But here comes the point. Simply to transfer a vicious district from one quarter of the town to another is no real improvement. It may, no doubt, be a satisfaction to the inhabitants of western Bloomsbury and Oxford-street to know that such a hot-bed of vice as the old Bokerly of St. Giles no longer contaminates their neighbourhood; but of what advantage is this removal in a public sense, if we remain at the same time perfectly aware that the mass of vice and crime which had been previously concentrated at this given spot is now transferred bodily to another quarter; or, as the alternative, has been disseminated and scattered throughout the whole of the metropolis?"